FOREST INSECT CONDITIONS
on the
BOISE NATIONAL FOREST
1967

The following report depicts major forest insect problems encountered on the Boise National Forest during 1967. Information for the report was accumulated from aerial detection flights and on-the-ground biological evaluations. In many cases, forest insect problems were brought to our attention by verbal and written reports from your staff.

Widespread buildups of the Douglas-fir beetle were found on the southern half of the Forest. Ips beetles that killed large groups of small diameter ponderosa pines in 1966, appeared to be at a lower level of activity this year. Mountain pine beetle attacks in ponderosa and lodgepole pines caused small group killing in widely scattered locations. Mountain pine beetle attacking ponderosa pine on private land southeast of Cascade continued at about the same level as last year with no apparent movement toward Forest lands. Western pine beetle killing of ponderosa pine was observed in scattered locations; however, no large epidemic centers have been detected to date. The highly persistent spruce budworm infestation in primitive area stands of Douglas-fir, true firs, and spruce, decreased markedly. This downward trend was also observed on neighboring forests where budworm activity has been at a high level for several years. Tussock moth feeding on Ceanothus sp. in the Town Creek plantation was light. Little or no damage to young ponderosa pine was noted in the plantation areas this year. However, egg mass deposition was more pronounced this fall than last. There is a possibility of this defoliator causing increased damage to Ceanothus sp. and pine reproduction in 1968.

DOUGLAS-FIR BEETLE - Dendroctonus pseudotsugae Hopk.

Prior to 1963, large buildups of Douglas-fir beetle occurred throughout Southern Idaho. Then due to natural factors, populations dropped to a low level in 1963. During the winter of 1964-65, unseasonable rains caused rapid snow melt and were followed by heavy winds and snow. Douglas-fir stands were subjected to widely scattered wind throw and snow toppled trees at this time. In the summer of 1965, a considerable amount of downed semi-green host material was available to the Douglas-fir beetle. The inevitable occurred and Douglas-fir beetles rapidly filled into the downed trees. The broods overwintered as adults and in the spring-summer flight season of 1966, attacked standing trees. During aerial detection flights this year, large groups of infested Douglas-fir were found throughout the southern half of the Forest, and several new infestation centers were noted on the Emmett Ranger District. On-the-ground evaluations of several of these infested areas showed that beetle populations are maintaining epidemic trends. The overall ratio of increase is about five newly attacked trees for every one from last year.

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Chemical control of the Douglas-fir beetle is seldom, if ever, economically feasible because of the cost involved in locating and treating infested trees. The most efficient method of suppression, is infested tree removal through logging. This year, however, due to the widely scattered nature of the attacks, it would be physically and economically impossible to log all infestations that were found. Therefore, it is recommended that areas of highest value be logged or incorporated into existing sales where possible.

In 1966, some small groups of infested Douglas-fir were found on the Bogus Basin Ski area which is on State and Federal Lands. These groups were delineated and most trees removed or burned. An additional fourteen trees that could not be removed or burned were scheduled for ethylene dibromide treating. However, treating was not done and the infested trees remained in place. Other than this small group of trees, the area appeared to be relatively free of Douglas-fir beetle attack centers at that time. This area is surrounded by stands of Douglas-firs which were attacked by the beetle in 1966. At the present time, over two hundred heavily infested trees have been located at the ski area. From the commercial timber standpoint these trees are not high quality; however, they shade ski slopes, act as wind barriers, and are aesthetically pleasing. Efforts were initiated to see what could be done to suppress the infestation. All groups that were found during a 100% cruise were marked and the Forest exercised administrative use authority to reduce the selling price. Removal of the infested trees was started in late December and should be completed in late January or early February. The State Department of Public Lands, Forestry Division, was contacted and informed of infestations on their land. They in turn, advertised and sold infested and high risk trees in the Bogus Basin area under their management. The same purchaser bought both adjacent sales and will remove the infested Douglas-fir from State Lands as soon as logging is completed on Federal ground.

IPS (Several Species)

The 1966 field season was characterized by 600-700 tree group infestations of Ips beetles in small diameter ponderosa pines throughout the Idaho City, Garden Valley, and Cottonwood Ranger Districts. The 1967 aerial detection flights showed that infestations appeared to be declining in size and number of trees attacked. However, there is still an extremely high residual population of Ips beetles on these three districts, such as those found on the Garden Valley District in the Lightning Creek Sale. Cutting was started in ponderosa pine during late July. Usually first generation Ips would have flown by this time and the probability of standing tree attacks occuring from second and third generation Ips should have been minimized. However, these populations built up rapidly in logging slash and attacked standing trees. Fading started to show up in late September and October. During normal years this situation would rarely have occurred. This is being pointed out as several of your Foresters and Staff people have asked what they

can do about this type of situation. If we have similar weather conditions in 1968 as were experienced in 1966-67, there is a possibility that Ips beetles will definitely follow an epidemic course wherever green material is put on the ground prior to August 15. Regional cutting guides specify that thinning can be started after July 1 with little chance of Ips becoming epidemic. In cases where weather has provided excellent Ips buildup conditions, this cutting guide cannot be adhered to without the threat of starting localized epidemics. There is no way to tell what next year's weather will be, however, if it begins with high temperatures, low humidity, and small amounts of precipitation, cutting should be deferred. A problem such as this may be difficult to live with, however, the only other alternative is midsummer burning of slash.

MOUNTAIN PINE BEETLE - Dendroctonus ponderosae Hopk.

Mountain pine beetle activity in ponderosa and lodgepole pines remained at a fairly low level during the 1967 field season. Small groups of beetle attacked ponderosa pine were detected on the Mountain Home District in the vicinity of Castle Creek. This infestation has been in progress for three years but shows no sign of increasing at the present time. Elsewhere, losses were confined to small group infestations of about the same level noted in the past two years.

Last year's report kept you up-to-date on the infestation in second growth ponderosa pine southeast of Cascade. At that time, due to overlapping of broods and the phenomenon of two flights that year, it was surmised that the biology of the insect may have been so interrupted as to cause a static or downward trend. This year's aerial survey, followed by an on-the-ground evaluation showed approximately 2500 to 3000 trees have been attacked. Also, brood densities are remaining at a fairly high level, averaging 120 to 140 square foot. Thus, instead of remaining static or decreasing, the infestation continued at a relatively high epidemic level. So far, we have not noticed beetle attacks moving toward Forest land. Small diameter ponderosa pines which have been the preferred host material in the past are being depleted and attacks are occuring more often in the larger diameter trees, above twelve inches D.B.H. Unless adverse biological and climatological factors reduce these populations, we can expect a continuance of the infestation through the 1968 field season at about the same level.

SPRUCE BUDWORM - Choristoneura occidentalis

Spruce budworm populations continued their downward trend in the Idaho Primitive Area for the second consecutive year. No new infestations were found on other areas of the Forest. Present low population levels are associated with similar declines on the neighboring Payette, Challis, and Sawtooth Forests. Decreasing trends were probably brought about by adverse weather conditions in the fall of 1965 and spring of 1966 when hard freezes that coincided with first and second instar larval migrations, caused heavy mortality. The following table shows a five year history of budworm defoliation intensity in the Idaho Primitive Area of the Forest.

DEFOLIATION INTENSITY

Year	Light	Moderate	Heavy	Total
1963	2,400	10,080	43,680	56,160
1964	20,800	28,800	24,000	73,600
1965	-	-	60,200	60,200
1966	56,800	2,600	-	59,400
1967	25,100	3,800	-	28,900

Egg mass surveys were not made in the primitive area because the predictions for the following year's populations have paralleled population trends of neighboring forests for several years. Egg mass data from the other forests indicates less than 25% defoliation for 1968, and we expect the Boise infestation to be at approximately the same level.

TUSSOCK MOTH - Hemerocampa sp.

The persistent tussock moth infestation in Town Creek remained at a low level of activity this year. Larval populations did not deplete their preferred host plant, Ceanothus sp., hence there was no migration to ponderosa pine as they have done in past years, and no damage occurred to the young plantation trees. Fluctuations in tussock moth populations appear to be governed by a native polythedral virus and a small dipterous egg parasite. Weather which varies considerably from year to year, can accelerate or inhibit insect development. Combinations of these bioclimatic factors have held tussock moth population at fairly low levels for the past two years.

Egg mass surveys this fall revealed an increased number of masses per bush. In addition, individual eggs per mass averaged over 200 which is an increase from the usual 150 per mass. The potential for accelerated defoliation in 1968 is present in the Town Creek plantation at the present time. Spring and early summer evaluations of virus and egg parasitism will provide information as to the possible need for control.

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